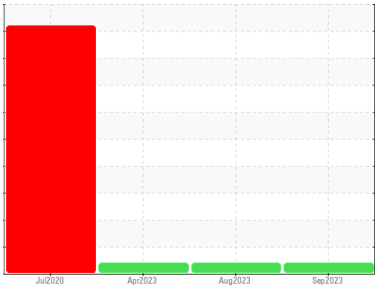
OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY

Machine Id
4702
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. The fluid was specified as PETRO CANADA DURON SHP 15W40, however, a fluid match indicates that this fluid is SAE 30 Diesel Engine Oil. Please confirm the oil type and grade on your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

Viscosity of sample indicates oil is within SAE 30 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0035516**	GFL0035515	GFL0035513
Sample Date		Client Info		**19 Sep 2023**	01 Aug 2023	25 Apr 2023
Machine Age	hrs	Client Info		**16492**	0	13038
Oil Age	hrs	Client Info		**600**	600	600
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	0.6	1.4

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>120	**40**	17	13
Chromium	ppm	ASTM D5185(m)	>20	**1**	<1	0
Nickel	ppm	ASTM D5185(m)	>5	**<1**	0	<1
Titanium	ppm	ASTM D5185(m)	>2	**0**	0	<1
Silver	ppm	ASTM D5185(m)	>2	**<1**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**4**	2	3
Lead	ppm	ASTM D5185(m)	>40	**<1**	1	<1
Copper	ppm	ASTM D5185(m)	>330	**2**	1	2
Tin	ppm	ASTM D5185(m)	>15	**0**	0	<1
Antimony	ppm	ASTM D5185(m)		**0**	0	<1
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**20**	21	31
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**101**	86	85
Manganese	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	**48**	31	36
Calcium	ppm	ASTM D5185(m)	1070	**2181**	2122	2125
Phosphorus	ppm	ASTM D5185(m)	1150	**1042**	1038	1033
Zinc	ppm	ASTM D5185(m)	1270	**1147**	1184	1111
Sulfur	ppm	ASTM D5185(m)	2060	**3165**	2940	3040
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

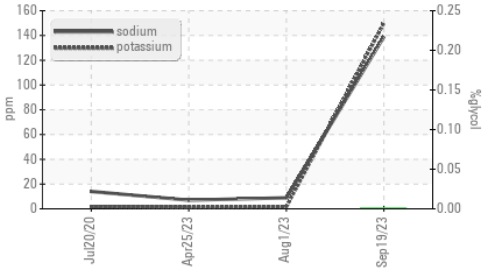
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**7**	6	5
Sodium	ppm	ASTM D5185(m)		**139**	9	7
Potassium	ppm	ASTM D5185(m)	>20	**150**	2	1
Glycol	%	ASTM D7922*		**0.0**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>4	**1.2**	0.7	0.4
Nitration	Abs/cm	ASTM D7624*	>20	**13.6**	9.8	10.1
Sulfation	Abs/.1mm	ASTM D7415*	>30	**24.8**	22.2	21.4

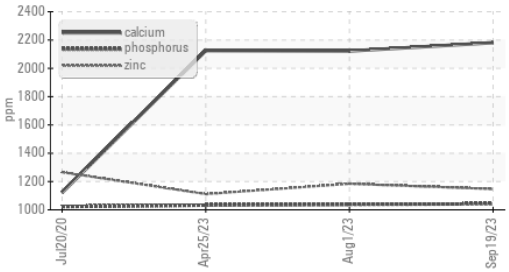
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**19.5**	15.7	15.9

OIL ANALYSIS REPORT

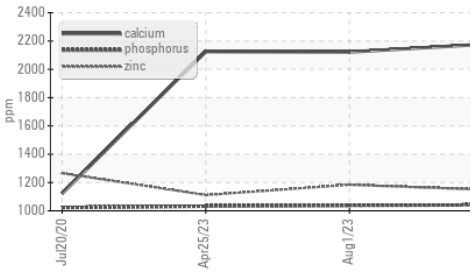
Glycol Contamination



Additives



Additives

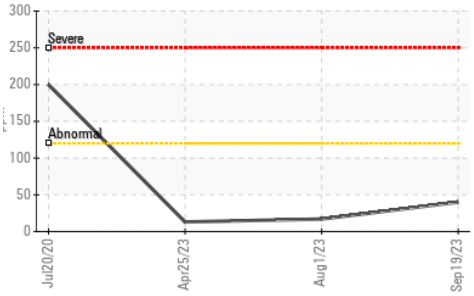


VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

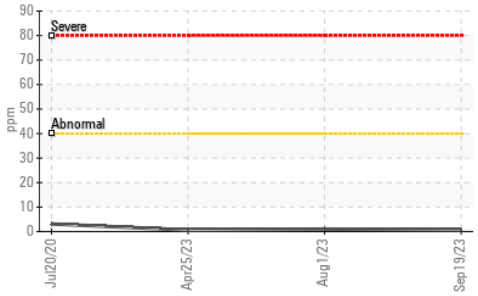
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	▲ **11.2**	▲ 11.3	▲ 11.0

GRAPHS

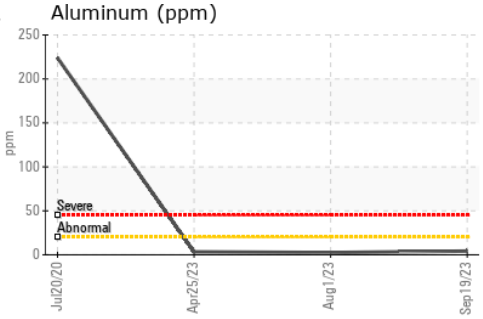
Iron (ppm)



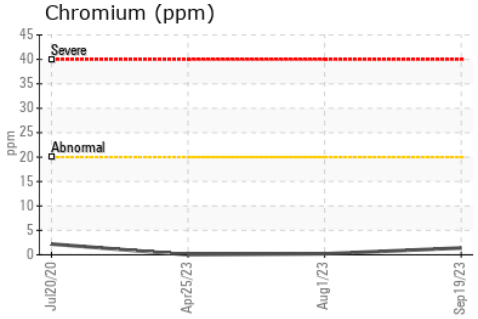
Lead (ppm)



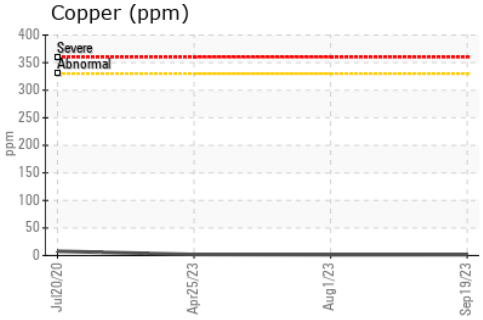
Aluminum (ppm)



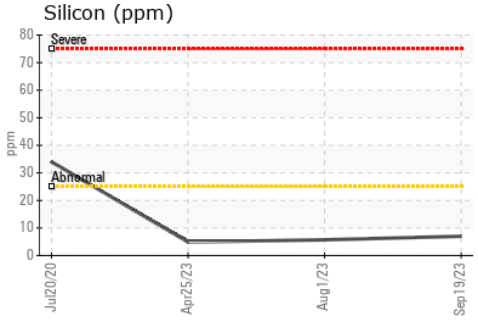
Chromium (ppm)



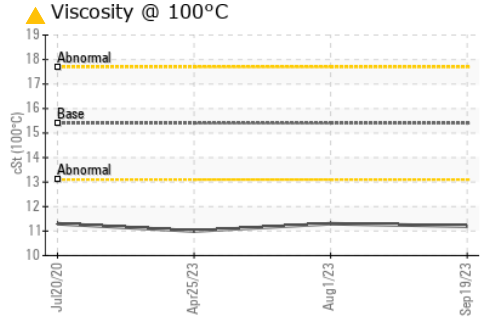
Copper (ppm)



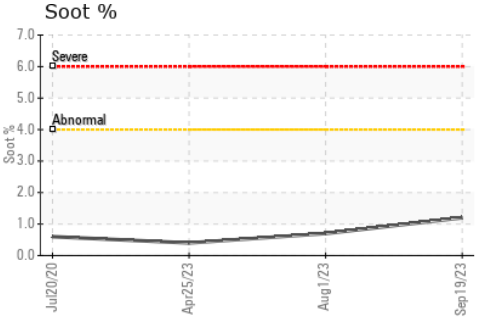
Silicon (ppm)



▲ Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 213 - Kitchener**
Sample No. : GFL0035516 **Received** : 21 Sep 2023 16 Centennial Road, Kitchener Yard
Lab Number : 02584332 **Diagnosed** : 25 Sep 2023 Kitchener, ON
Unique Number : 5645397 **Diagnostician** : Bill Quesnel CA N2B 3G1
Test Package : MOB 1 (Additional Tests: Glycol) Contact: Keith Zehr

To discuss this sample report, contact Customer Service at 1-800-268-2131. kzehr@gflenv.com
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (226)751-4416
Validity of results and interpretation are based on the sample and information as supplied. F: x: